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Corn and Culture in the Prehistoric New World

EDITED BY

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Papago. On salt expeditions, the leader carries six prayer sticks and three cobs of abnormal corn -- flat and deformed, called "flat-head corn." The first night on the road he takes grains from these, four each time, chews them, and then spits into the mouth of every horse to make it strong. Some meal ground from the same kind of corn cobs is carried to be sacrificed to the sea (Lumholtz 1971:270-271).

Aztec. Sahagún shows a picture of the deity Chicomecoatle with general oversight of food plants. "She is usually shown holding in one hand a shield decorated with something which resembles a sunflower and in the other hand, which is uplifted, her special symbol, a conventional double ear of corn" (Weatherwax 1954:229).

Oaxaca, Mitla. "Sacrificial bread is made from the flour of double ears of corn" (Parsons 1936:228). "Double ears are a sign of a good yield the coming year. At San Baltazar double ears are used as seed corn; they are betoken abundance and near one altar I noticed the three or four ears hanging" (Parsons 1936:229).

Maya (Tzotzil). A double ear is used as a corn mother (Vogt 1969:50).

Mixe of Tepuztepec. Double ears of corn are saved from the previous harvest and seeds of everything that has been planted are left at the springs when a man prays for good crops (Toor 1947:508).

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Corn Is Our Mother

Richard I. Ford

Corn and Culture

These four simple words are heard in every Southwestern pueblo from the Rio Grande trench to Zuni and Hopi in the west. They have probably been heard for a thousand years, but this we can only surmise. What they mean is that corn creates culture, that it sustains life, and that it is the authority for social action. Furthermore, corn is the mediator of cultural oppositions at all levels. In short, it is the key symbol in Pueblo culture.

Frank Hamilton Cushing first introduced an anthropological audience to the cultural significance of maize in his classic *Zuni Breadstuff*. Published posthumously as a monograph in 1920, his essays actually first appeared in *The Millstone* from January 1885 until August 1889. Over one hundred years ago Cushing accomplished what many of us have been trying to achieve since. He analyzed the role of corn in Zuni society from its mythical origin to its present cultivation, from its social dimension to its subsistence importance, from its ceremonial centrality to its daily preparation. Without corn there would be no Zuni. To quote Cushing:

> Indeed so important to the Zuni is his corn, that it plays an all-essential part, not only in his daily but also in his industrial, religious, and mythologic life, and even in the tales with which he amuses the children about the fireside in winter-time (Cushing 1920:18).

The origin myth of each pueblo is its charter. As such it explains human existence. Each is different and yet all account for the presence

If corn symbolizes the eternal mothers and by extension, life, and if perfect ears of six colors can stand for supernatural forces, we would expect that such a powerful symbol would also mediate opposing forces and bring harmony to society. Indeed corn does this. Sun Father and Earth Mother are universally male and female principles, respectively. Their union is represented by corn. Corn Maidens were created after Mother Earth and are clothed in the same colors as the directions. Their playmates are the Cloud Youth, males also clothed in the colors of the directions. Colored ears can stand for both in ceremonies since corn is male and female. Finally, husbands and wives are bound by corn. The man raises it and the woman stores and prepares it. "If you don't raise corn, you can't be married," is a Pueblo proverb that materially substantiates the mediation of opposites.

But corn has the dynamic power to transform the world, not just to resolve conflict or chaos. Corn gives life but it is also a cultural artifact, the product of domestication, a plant that does not reproduce without humans. As a life-giving force it can be used to feed people, spirits, and animals. When an animal is killed, its soul can be released happy as long as cornmeal is placed in its mouth while its head is facing the rising sun. Ritual objects used in ceremonies or secreted in storage are fed cornmeal or corn pollen as payment for their power. Furthermore, ritual paths are created with cornmeal and can lead the spirits to a village or sacred shrine or animals, dramatically, to the hunter. The first point is self-explanatory, but the second needs elaboration. In Rio Grande Pueblo game dances, men costumed as animals warily approach a village, but once they are on a trail of cornmeal they are pacified, at least tamed. The transformation of animals figuratively into corn is revealed in the killing of a bear by Santa Ana Pueblo hunters. The bear is the most powerful animal in Pueblo lore, admired for its strength and intelligence. It is first among animals, just as corn is first among plants. Yet as White relates it:

> There are certain figures of speech employed when speaking of killing, skinning, or eating a bear. One says, *'so'waikya*. "I took the ear (of corn) of the stalk," meaning, "I killed the bear"; *'-g'owakakai'yots*, "he breaks the ear," meaning "he cuts the bear's legs off"; *Kinatiso'pe*, "I eat roast corn," meaning "I eat bear meat." Everyone uses phrases of this sort when speaking of the bear... (White 1942:315).

The dead bear is brought to the hunter's house where it is met by his sister and the *hakanyi tcaianyi*. They both make roads of cornmeal for the bear to enter, and the sister "pretends to carry the bear into the house in her basket tray of meal." The transformation is more apparent when the hunter chief at Laguna gathers corn pollen, mixes it with water, and molds it into little animal figures. After breathing on them to give them life, he "plants" them in the mountains to insure reproduction of wild creatures just as corn kernels are planted in the fields to insure a harvest (Ellis 1959:340).

Corn and Cultivation

Corn is pervasive in Pueblo thought and life; its expression is variable from culture to culture. But this is not so for its cultivation. To raise corn depends upon the biology of the plant, and here variability in cultivation is limited. To be more explicit, a farmer from Ojo Caliente village at Zuni and one from San Pueblo would have much in common discussing their corn crop but less understanding debating the metaphysics of corn in their respective cultures.

A corn kernel is a biological organism requiring a definite constellation of environmental factors to germinate, grow, reproduce, mature, and remain viable until another planting season. Precipitation, temperature, wind, and other organisms conspire throughout the corn's life cycle to produce a crop or to reduce the yield. The Pueblo farmer must intervene directly and indirectly to assure a successful harvest (Figure 27.1).

His direct impact is the effort to maximize the growing conditions of the corn. The farmer can prepare the field by cutting and burning the natural vegetation or by modifying the natural physiography through the building of terraces or the digging of irrigation canals (Figure 27.2). Soil fertility can be enhanced by burning the old field or by adding fertilizer of household wastes. Water can be controlled by harvesting run-off, flooding fields, or irrigating from canals. Temperature can be mitigated by planting on higher, south-facing slopes or by capturing heat reflected from vertical cliff walls. Wind is diverted with branches and even tin cans to protect the young plant. Birds are thwarted with scarecrows. Cutworms are outsmarted by planting an-

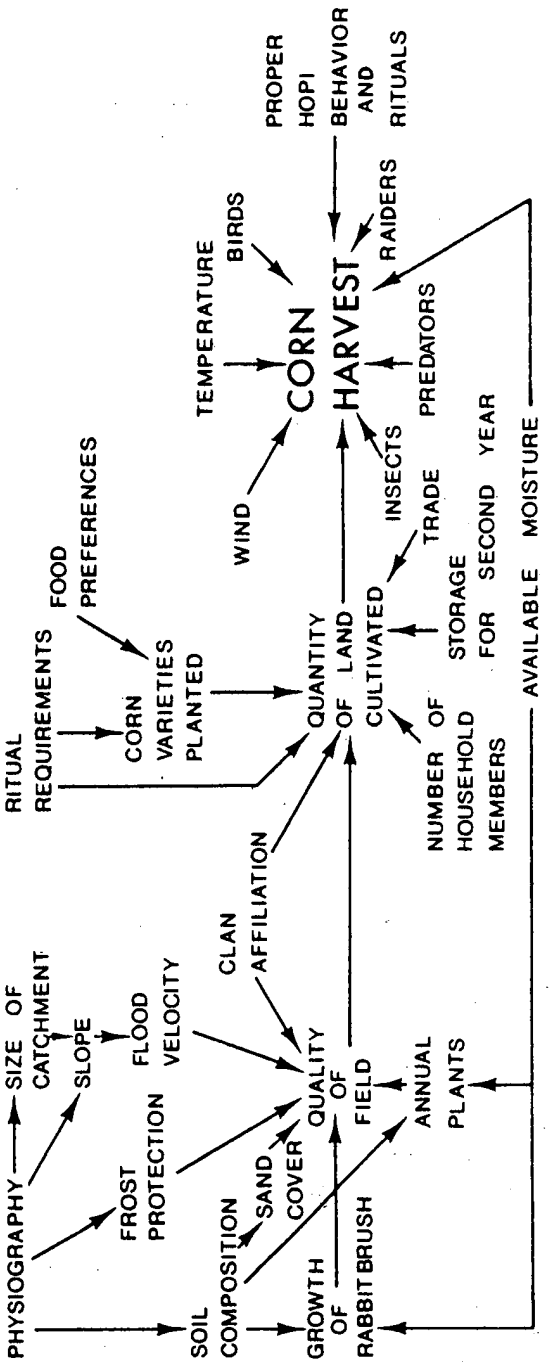

Figure 27.1. Factors determining quantity of corn produced.

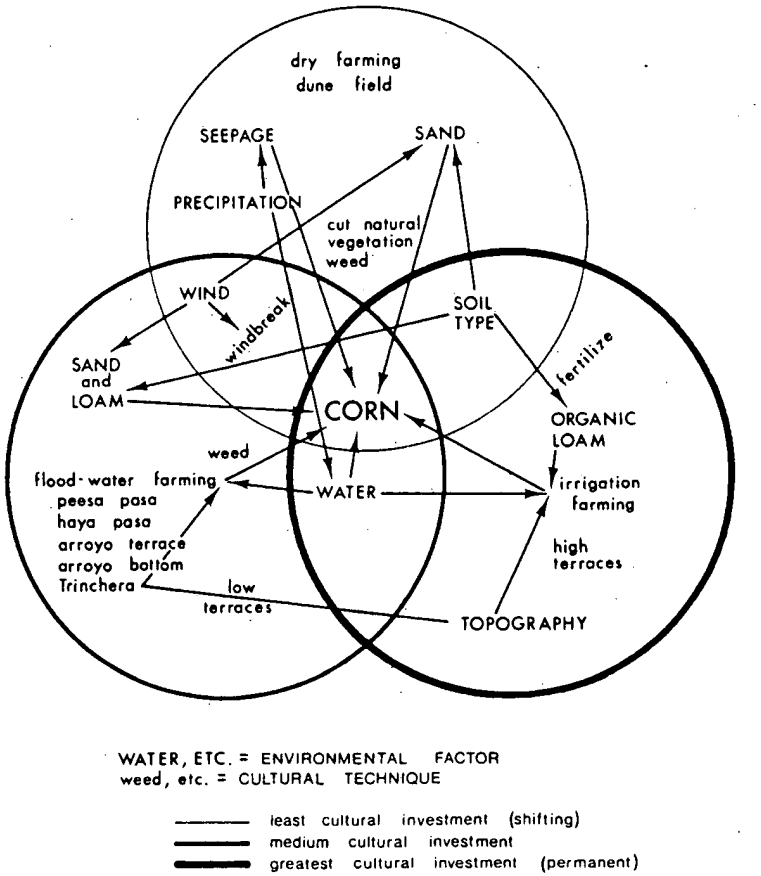

Figure 27.2. Spheres of environmental and cultural control in corn production.

nually in alternate rows. Deer, turkeys, and dogs are discouraged by the farmer from residing in the field as the crop matures. These are the practical measures farmers are taught from youth or learn from others.

The indirect methods are equally important to the farmer but more difficult to verify empirically. All Pueblo cultures recognize the annual cycle of life. They acknowledge in prayer and stories the short, cold days at the winter solstice and the long, hot ones in summer; they wit-

flowers, the full leaves, and the blush of autumn. Most believe they have the power to control nature. The ceremonial cycle of retreats and dances are intended to make nature predictable and to control the occurrence of biological events. Examples can be found in all pueblos (*e.g.* Hopi in Figure 27.3) but a description from San Juan will suffice. Here the ceremonialists, the Made People who gained their wisdom and power under the lake of emergence, have a sequence of prayer retreats beginning soon after the winter solstice. The first, "Of Moderation," lessens the cold weather and melts the snow. Three others, "Bringing the Buds to Life," "Bringing the Leaves to Life," and "Bringing the Blossoms to Life," occur in quick succession before and after the vernal equinox. By this time the agricultural cycle is in full swing. The land is prepared, irrigation ditches are open, and the farmers are reading the signs in nature to decide when to plant their corn. In July the male Made People climb the summit of Tsicomo Mountain, the sacred peak of the West, to clean the earth navel and to lead the rains to the fields by making a path of cornmeal, broken plants, and collections of mountain plants to be left as "water-stops" in the fields. The "Early Harvest" in August celebrates the first garden crops. The "Late Harvest" initiates the harvest of the field-dried, staple crops of corn and beans.

Tewa farmers also pray in concert or individually to assure control over the forces of nature that control weather, fertility, a crop. Summer races for the sun, corn dances, and prayers accompanied by cornmeal food of thanksgiving for the spirits assure a crop. But even these actions will not guarantee a corn harvest. A farmer who fails his religion will find his crop consumed by grasshoppers. The farmer who harvests before the last retreat will be prevented from further harvesting until the horses are released into the now denuded fields of other farmers. Guess where the horses head?

Even the best farmer acknowledges the difficulty of raising a corn crop in the arid Southwest. The goal for most farmers regardless of their pueblo is to plant enough for two years of familial needs: a 50 percent loss will still suffice for a year. Even this "rule" may not work. Two other means are available to provide the Tewa with corn. The first is ceremonial redistribution. Each ritual is conducted by a ceremonial organization, and most Tewa have close relatives in such societies. Offerings are made in the form of ground cornmeal, fresh

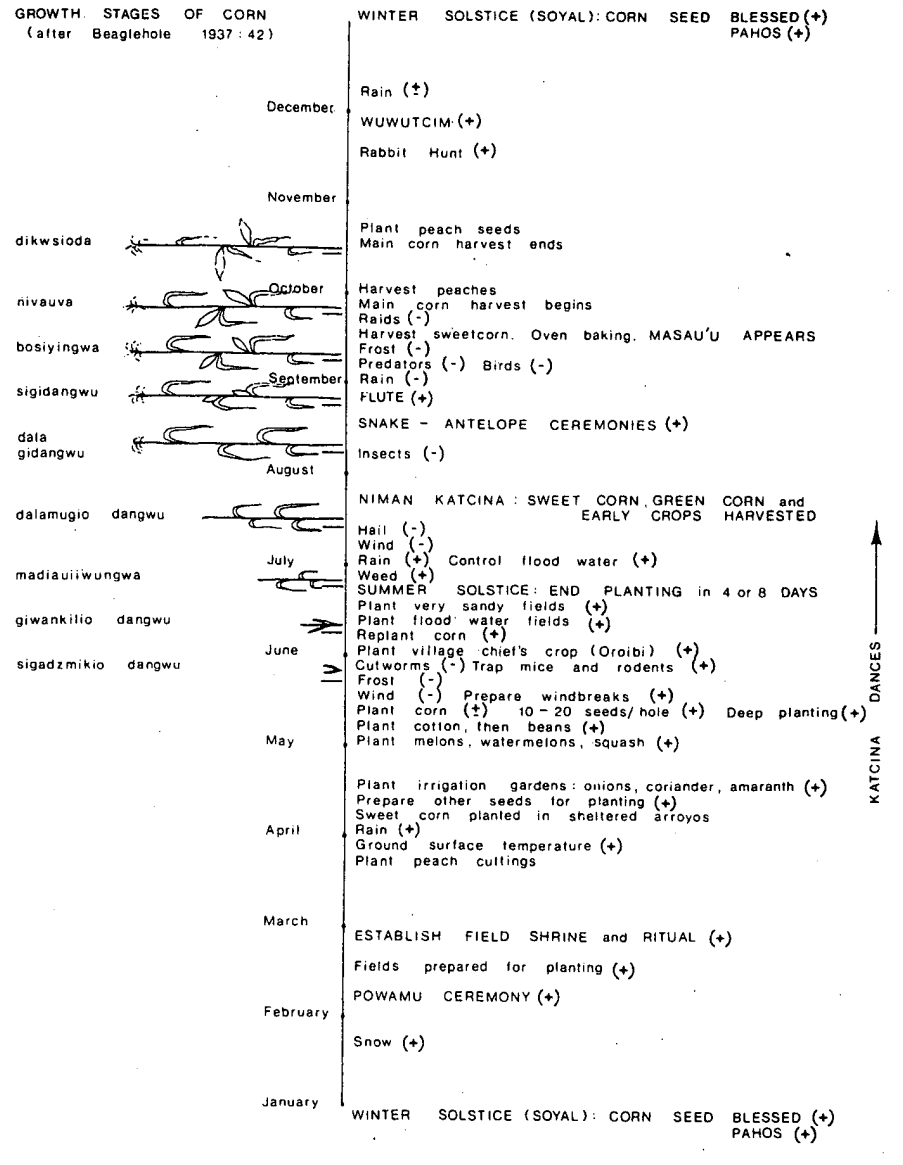

Figure 27.3. Calendar of Hopi crop production ("+" indicates beneficial activity while "-" indicates a negative activity or event).

paper bread, or baked bread. Participants will plant extra land to assure food for the ceremonies. At the conclusion of each, the food offerings are given to the participants or distributed to the spectators. These rituals are frequent enough, especially in winter, that shortfalls of limited duration can be covered without the pangs of hunger or starvation. The ceremonies with meaningful redistribution are calendrical rites and are timed according to the position of the sun on the horizon. The sun's wide arc through the year is noted and certain markers trigger annual ceremonies with offerings of corn for the spirits whose favors are sought. In the absence of strong political authority, ritual activities stimulate extra production, and ritual redistribution shares the corn harvest beyond the household (Ford 1972). The second means is the separate cultivation of each color of corn. The ceremonial demands for perfect ears and pure color corn necessitate the cultivation of each separately. The amount needed for religious purposes is not inconsequential. The strategy that has evolved in many pueblos is to plant the corn in separate fields. The land tenure system has further isolated these varieties. While the benefit is more genetically pure corn, the latent function is that the planting pattern reduces the likelihood of a complete crop loss possible if all plants were grown together (Ford 1980).

Despite these efforts to produce a crop in a potentially hostile environment, even under the best growing conditions the inbreeding of such highly selected corn can also lead to a diminished yield. Pollination is recognized as the basis of fertilization but cultural practices to control it are deliberately not employed. Again, religious ceremonies provide a solution. At several times during the year farmers have access to seed raised by others. Kernels for planting are given to spectators during some Katchina dances. Others are distributed, as noted previously, at the conclusion to the critical rites of birth and death. All these kernels are dispersed randomly beyond the household, outside immediate relatives, but their sacred quality assures they will be planted, given special care, and mature to pollinate neighboring plants. If cornmeal is the food of the gods, ceremonially employed corn kernels are reciprocal gifts of the gods to assure an abundant and, we might add, genetically diverse crop.

Corn and Archaeology

What I have just briefly described about corn as the Mother of Pueblo people and, indeed, of Pueblo culture has numerous implications for archaeology. Too frequently, corn is described by paleoethnobotanists for its biological attributes or for defining racial types; that it is a selected product of past cultures is forgotten. Moreover, corn's mundane value as a food receives emphasis over its more perplexing role as a symbol. In my earlier description, I emphasized that how a culture explains the origins of corn provides perspective for the role of corn in a culture. Similarly, I stressed the dynamic aspects of corn cultivation as a farmer attempts to overcome environmental vicissitudes. Many of these metaphysical and practical issues should be of interest to southwestern archaeologists.

The evolution of a heliocentric world view should be explored by archaeologists just as it dominates the thought of Pueblo people (see Bohrer, this volume). The Sun Father is a basic concept in all the pueblos, but when it began and how it evolved remain speculative. I believe it is not a concept that diffused from Mexico, but one that probably emerged in Basket Maker III times when the ecological importance of corn changed from the dietary supplement it was in the late Archaic (as exemplified at Bat Cave and Jemez Cave with their many small cobs) to the seasonal staple it became in Basket Maker III. The elevated subsistence value of corn would require more precise timing for planting and for harvesting. If ceremonies were created to assist this vulnerable plant, they may have evolved from the hierarchical power of animal spirits to the domination by the sun and the horizontal directional symbolism created by its paths across the sky in winter and summer. These are not cardinal directions but sun-wise movements easily charted by people whose staple food -- corn -- demands light, warmth, and a calendar. The more important corn was in the economy, the more vulnerable the society became to ecological perturbations, and the more religion addressed the needs of corn in its life cycle. The origin of heliocentrism is not for archaeoastronomers to solve but for archaeologists and ethnobotanists to explain using a *Zea*-centric ecological model.